In the Specification

Please substitute the following paragraphs beginning on page 8, line 5:

In various embodiments, specific substrates can be used to stimulate specific groups or organisms. Hydrogen gas released directly or generated can be utilized by special bacteria but does not foster carbohydrate polymer slime formation that can plug aquifers; acetate utilized by a limited number of organisms as a major carbon source; methane used by a limited number of aerobic organisms, and only under special pressure and temperature conditions anaerobically. Many refractory chemicals such as poly aromatic hydrocarbons, tars, asphaltenes, chorobenzenes or polychlorobiphenyls are ~~utillilized~~ utilized by very selective group of organisms. Inorganic substrates such as sulfides are used by carbon dioxide fixing chemoautotrophs. Trace nutrients required are most often phosphate containing compounds or nitrogen containing compounds which may be added as supplements. Many organisms have other trace element needs that are usually met by multi-component mixes. Tungsten is required by some anaerobic archea and nickel by some methane-forming anaerobes.

In yet other embodiments, specific organisms with natural or engineered traits or genes are utilized to bioaugment special contaminant plumes. For example, *Pseudomonas stutzeri* KS secreting pyridine-2,6-bis(thiocarboxylic acid) (pdtca), a small secreted metabolite that has a high affinity for transition metals and increases iron uptake efficiency by 20% and has the ability to reduce both soluble and mineral forms of iron can be used. The copper complex of pdtca chemically destroys carbon tetrachloride. Another organism utilized widely in ~~bioaugmentaion~~ bioaugmentation is *Dehalococcoides ethenogenes* that degrades trichlorethylene to ethane without forming vinyl chloride. Other organisms suitable for use in bio augmentation are well known to those skilled in the art.

Please substitute the following paragraph beginning on page 15, line 22:

The capacity of the solid phase sampler system to document the correlation of metal precipitation with specific microbial metabolism has also been demonstrated with uranium in a laboratory reconstruction experiment. *Geobacter sulforeducens* in modified artificial groundwater supplemented with 10 mM ^{13}C-acetate and 200 ppm UCl_4 formed a biofilm on silicon wafers in 2 days at 30°C. Micro and nano-SIMS (secondary ion mass spectrometry) shows high congruence between uranium oxide deposition and the bacteria that formed a biofilm containing ^{13}C-lipids and ^{13}C –macromolecules [21, 22] Electron dispersive spectroscopy (EDX) was also used to chemically characterize the surface of the biofilm and locate the uranium-rich regions which were congruent with the bacteria. Bright-field scanning transmission electron microscopy (BF-STEM) was used to obtain distribution maps of number of cations including U at the nano-scale and show congruency between U and O. High-resolution images of the surface using high-angle annular dark field scanning electron microscopy (HAAD-STEM) reveal that these biominerals occur as patches on the surface of the bacteria and were precipitated as uranium oxide minerals. Selected area electron diffraction (SAED) patterns of these patches were acquired so that the structure of the uranium nano-biominerals can be inferred. The ~~SEAD~~ SAED patterns of the uranium biominerals indicate that the uranium oxide minerals are largely $UO_{2.87}$ and, therefore, are stable over a range of redox conditions.